VoIP Gateway

// Legacy and Remote

When legacy analogue and/or digital radios are installed at remote sites, they shall be capable of being accessed by a plurality of operators (resource sharing) through an EUROCAE ED137 standard VOIP (Voice Over IP) WAN MPLS network. Moreover, different kinds of telephone networks may have to be interfaced to allow non-VOIP calls to be interconnected to VOIP ones and vice versa.

Gateway Voice Systems (GVS) are the answer by SITTI to provide Customers with a powerful and cost-effective solution to solve their legacy analogue and/or digital connection problems, by converting audio and data to the latest VoIP standards and technology.

The overall scenario may be complicated by the fact that remote radios and telephone lines may be old fashioned and/or from different vendors. Another situation is the other way round, when the current system is TDM based, while ED137 radios are to be connected.

THE SOLUTION IS SITTI GVS

- Remote radios of any kind can be connected to a standard IP network by means of SITTI **GVS-R** gateway devices that take care of all required settings and possible legacy protocols towards the radios themselves. They convert data and audio signals into the EUROCAE ED137 standard VOIP protocol and vice versa.

- Any kind of telephone lines (FXS, FXO, 4 wires E/M, MFC, E1, ISDN, etc) can be connected to SITTI **GVS-T** gateway devices, thus allowing VOIP and non-VOIP networks to co-exist.

- Radio and Telephone GVS interfaces can be housed in the same physical drawer, thus integrating radio and telephone functions and reducing costs (**GVS-RT**).

// SITTI VoIP Gateway
VoIP Distribuited Architecture & Devices
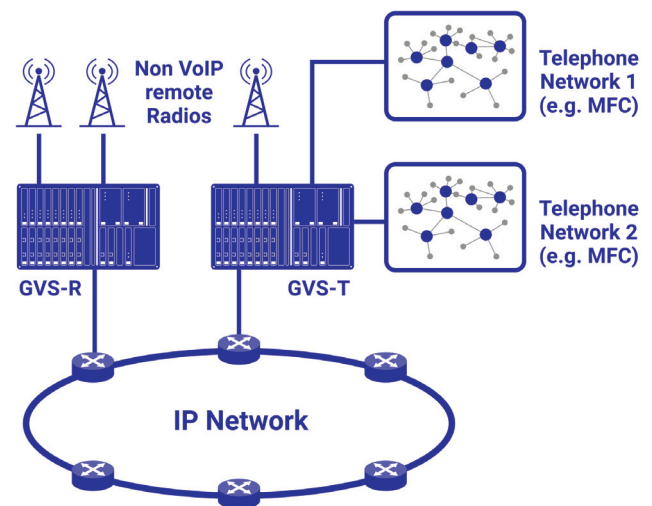
Thanks to their modularity, GVS devices can be customized to cope with small radio sites up to large radio installations with tens of co-located radios through a number of possible interfaces (4 wires standard E&M analogue, E1, Nx64, QSIG digital, etc.). The same applies on the telephone side, where multiple co-existing connections to different telephone networks are provided as a standard option.

The interface to the IP WAN network is duplicated for reliability reasons. As foreseen by the EUROCAE ED137 standard, GVS devices can be simultaneously accessed by a number of VCS systems, thus guaranteeing access to the same resources by operators at different sites at the same time. Satellite connections are also envisaged.

According to the number of connections to be interfaced, GVS devices can be delivered in subracks of 1 or 3 or 6 units height. New cards can be added at any time, without disrupting ongoing communications.

GVS devices include facilities to automatically look for other radios with the same characteristics in case of failure of the one being used. This automatic search procedure allows VCS operators to continue their work without suffering of service disruption, even in case of total radio failure. Best Signal Selection (BSS), audio compression and delay compensation are standard features provided by GVS devices.

Each of the modules that make up the GVS gateway works in stand-alone mode and regardless of the others, thus guaranteeing full independency and the provision of **hot swap facilities** between cards, and assuring an uninterrupted service.

Configuration and maintenance are achieved via SNMP through the same MMS software platform that is also usedM for the SITTI VCS. Customers can autonomously define GVS configuration parameters and collect their status over a regional or national WAN.

// GVS in Short

Voice Over IP (VOIP) technology

EUROCAE ED137 standard compliance

IP connection to remote radio sites

IP connection to telephone networks of different kinds

Multiple simultaneous access from different sites

Complete management of legacy protocols

Radio and telephone interfaces in the same physical device

Open Architecture, In-Operation Expandability

Duplicated connection to IP WAN

Automatic failed radio replacement

Best Signal Selection

Audio compression

Delay compensation

Non blocking configuration

Satellite connection

Very high reliability (99.9999%)

GVS-R VOIP Gateway - RADIO

GVS-T VOIP Gateway - TELEPHONE

GVS-RT VOIP Gateway - RADIO/TELEPHONE

// GVS Technical Information

Basic Characteristics

VOIP Digital Technology
EUROCAE ED137 standard
No single point of failure
Drawers of different size (1U, 3U, 6U units height)
Power: 230/110 VAC – 24-28 VDC – Internal/External
Very high reliability (99.9999%)

Standard Features

VOIP according to EUROCAE ED137
Multiple connections from remote VCSs
Automatic failed radio replacement
Telephone interfaces (FXS, FXO, 4wE/M, ISDN, QSIG, MFC, E1, etc)
Best Signal Selection
Audio compression
Satellite connection

Radio Interface

4 wires standard E&M analogue links
Digital links (e.g. E1)
In Band Signalling (IBS)
Legacy protocols from a variety of different radio manufacturers

// SITTI VoIP Gateway
VoIP Distribuited Architecture & Devices

RADIO SHARING

Non VoIP remote Radios

GVS-R

IP Network